

10/521,781

VII. The monomer charge, the amounts of catalyst components, and the properties of the resultant syndiotactic 1,2-polybutadiene produced in each example are summarized in Table VII.

DETD In Examples 46-52, the procedure in Example 1 was repeated except that iron(III) acetylacetone was substituted for iron(II) 2-ethylhexanoate, and triethylaluminum was substituted for triisobutylaluminum, having the catalyst ratio varied as shown in Table VIII. The monomer charge, the amounts of catalyst components, and the properties of the resultant syndiotactic 1,2-polybutadiene produced in each example are summarized in Table VIII. .sup.1H and .sup.13C NMR analysis of the polymer produced in Example 48 indicated a 1,2-linkage content of 84.6% and a syndiotacticity of 74.5%.

DETD In Examples 53-58, the procedure in Example 1 was repeated except that iron(III) acetylacetone was substituted for iron(II) 2-ethylhexanoate, dineopentyl hydrogen phosphite was substituted for bis(2-ethylhexyl) hydrogen phosphite, and triethylaluminum was substituted for triisobutylaluminum, having the catalyst ratio varied as shown in Table IX. The monomer charge, the amounts of catalyst components, and the properties of the resultant syndiotactic 1,2-polybutadiene produced in each example are summarized in Table IX.

DETD Inside a glovebox operated under a nitrogen atmosphere, 32.4 mg (0.20 mmol) of anhydrous iron(III) chloride powder was charged to into an oven-dried 1-liter glass bottle. The bottle was capped with a self-sealing rubber liner and a perforated metal cap and then removed from the glovebox. The bottle was charged with 132 g of hexanes and 368 g of a 1,3-butadiene/hexanes blend containing 27.2% by weight of 1,3-butadiene, followed by 0.80 mmol of bis(2-ethylhexyl) hydrogen phosphite and 2.80 mmol of triisobutylaluminum. The bottle was tumbled for 4 hours in a water bath maintained at 50° C. Workup of the polymerization mixture in a manner similar to that described in Example 1 gave 37.2 g (37% yield) of the polymer. As measured by DSC, the polymer had a melting temperature of 168° C. As determined by GPC, the polymer had a weight average molecular weight (M.sub.w) of 871,000, a number average molecular weight (M.sub.n) of 329,000, and a polydispersity index (M.sub.w/M.sub.n) of 2.6.

CLM What is claimed is:

8. The catalyst composition of claim 3, wherein (b) and (c) are combined in the presence of 1,3-butadiene monomer.

9. A catalyst composition for homopolymerizing conjugated dienes, the catalyst composition is formed by a process comprising the step of combining: (a) an iron-containing compound; (b) a dihydrocarbyl hydrogen phosphite; and (c) an organoaluminum compound; wherein at least two of the components (a), (b), and (c) are combined in the presence of conjugated diene monomer, and wherein the molar ratio of the organo aluminum compound to the iron-containing compound is equal to or greater than 12:1.

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FILE 'USPATFULL, USPAT2, CAPLUS, JAPIO' ENTERED AT 20:16:51 ON 05 SEP 2005

L1 330 SEA ABB=ON PLU=ON COBALT### AND (ISOBUTYL OR ISOPROPYL OR CYCLOHEXYL OR CYCLOPENTYL)(2A) (PHOSPHINE OR PHOSPHITE)

L2 145051 SEA ABB=ON PLU=ON L1 AND BUTADIENE OR DIENE

L3 305330 SEA ABB=ON PLU=ON BUTADIENE# OR POLYBUTADIENE#

L4 89 SEA ABB=ON PLU=ON L1 AND L3

L5 5 SEA ABB=ON PLU=ON L4 AND (ORGAN### OR ALKYL)(1A) ALUMINUM  
D L5 1-5 IBIB ABS

D L5 5 HIT

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FILE USPATFULL

FILE COVERS 1971 TO PATENT PUBLICATION DATE: 1 Sep 2005 (20050901/PD)  
FILE LAST UPDATED: 1 Sep 2005 (20050901/ED)  
HIGHEST GRANTED PATENT NUMBER: US6938271  
HIGHEST APPLICATION PUBLICATION NUMBER: US2005193458  
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REVISED CLASS FIELDS (/NCL) LAST RELOADED: Jun 2005  
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FILE USPAT2

FILE COVERS 2001 TO PUBLICATION DATE: 1 Sep 2005 (20050901/PD)  
FILE LAST UPDATED: 1 Sep 2005 (20050901/ED)  
HIGHEST GRANTED PATENT NUMBER: US2005139861  
HIGHEST APPLICATION PUBLICATION NUMBER: US2005193458  
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REVISED CLASS FIELDS (/NCL) LAST RELOADED: Jun 2005  
USPTO MANUAL OF CLASSIFICATIONS THESAURUS ISSUE DATE: Jun 2005

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FILE JAPIO  
FILE LAST UPDATED: 5 SEP 2005 <20050905/UP>  
FILE COVERS APR 1973 TO APRIL 28, 2005

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FILE 'USPATFULL, USPAT2, CAPLUS, JAPIO' ENTERED AT 20:16:51 ON 05 SEP 2005  
L1 330 S COBALT### AND (ISOBUTYL OR ISOPROPYL OR CYCLOHEXYL OR CYCLOPE  
L2 145051 S L1 AND BUTADIENE OR DIENE  
L3 305330 S BUTADIENE# OR POLYBUTADIENE#  
L4 89 S L1 AND L3  
L5 5 S L4 AND (ORGAN### OR ALKYL) (1A)ALUMINUM

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ENTRY SESSION  
FULL ESTIMATED COST 53.21 53.42

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## WEST Search History

DATE: Monday, September 05, 2005

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<input type="checkbox"/>	L1	(526/139 )![CCLS]	440

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